\_\_\_\_\_\_

Sequence Listing could not be accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2008; month=11; day=14; hr=14; min=33; sec=39; ms=642;

\_\_\_\_\_\_

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Reviewer Comments:

<210> 2

<211> 8210

<212> DNA

<213> ALVAC

The above <213> response is invalid, per 1.823 of the Sequence Rules; the only valid responses are: the Genus species of the organism, "Artificial Sequence," or "Unknown." "Artificial Sequence" and "Unknown" require explanation in the <220>-<223> section; please clearly give the source of the genetic material. Same error in Sequence 3.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## Validated By CRFValidator v 1.0.3

Application No: 10584378 Version No: 1.0

Input Set:

Output Set:

**Started:** 2008-10-17 14:25:21.057

Finished: 2008-10-17 14:25:22.085

**Elapsed:** 0 hr(s) 0 min(s) 1 sec(s) 28 ms

Total Warnings: 9

Total Errors: 0

No. of SeqIDs Defined: 22

Actual SeqID Count: 22

Err	or code	Error Description
W	402	Undefined organism found in <213> in SEQ ID (2)
W	402	Undefined organism found in <213> in SEQ ID (3)
W	213	Artificial or Unknown found in <213> in SEQ ID (4)
W	213	Artificial or Unknown found in <213> in SEQ ID (15)
W	213	Artificial or Unknown found in <213> in SEQ ID (17)
W	213	Artificial or Unknown found in <213> in SEQ ID (19)
W	213	Artificial or Unknown found in <213> in SEQ ID (20)
W	213	Artificial or Unknown found in <213> in SEQ ID (21)
W	213	Artificial or Unknown found in <213> in SEQ ID (22)

## SEQUENCE LISTING

<110>	Sanofi Pasteur	
<120>	Modified KSA and Uses Thereof	
<130>	API-03-17-PCT-US	
<140>	10584378	
<141>	2008-10-17	
<150>	PCT/US04/42980	
<151>	2004-12-23	
	60/532,205	
<151>	2003-12-23	
<160>	22	
<170>	PatentIn version 3.3	
<210>	1	
<211>	16	
<212>	PRT	
<213>	Homo sapiens	
<400>	1	
Ser Arc	g Arg His His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His	
1	5 10 15	
<210>	2	
<210> <211>	2 8210	
<211>	8210	
<211> <212> <213>	8210 DNA ALVAC	
<211> <212> <213> <400>	8210 DNA ALVAC	60
<211> <212> <213> <400>	8210 DNA ALVAC	60
<211> <212> <213> <400> gcccttt	8210 DNA ALVAC	60
<211> <212> <213> <400> gcccttt	8210 DNA ALVAC  2 stegt ctegegegtt teggtgatga eggtgaaaac etetgacaca tgeageteec	
<211> <212> <213> <400> gcccttt ggagacg	8210 DNA ALVAC  2 stegt etegegegtt teggtgatga eggtgaaaae etetgacaea tgeageteee eggte acagettgte tgtaagegga tgeegggage agacaagece gteagggege egggt gttggegggt gteggggetg gettaactat geggeateag ageagattgt	120 180
<211> <212> <213> <400> gcccttt ggagacg	8210 DNA ALVAC  2 tegt etegegegtt teggtgatga eggtgaaaac etetgacaca tgeageteee eggte acagettgte tgtaagegga tgeegggage agacaageee gteagggege	120
<211> <212> <213> <400> gcccttt ggagacg gtcagcg actgaga	8210 DNA ALVAC  2 stegt etegegegtt teggtgatga eggtgaaaae etetgacaea tgeageteee eggte acagettgte tgtaagegga tgeegggage agacaagece gteagggege egggt gttggegggt gteggggetg gettaactat geggeateag ageagattgt	120 180
<211> <212> <213> <400> gccctttt ggagacg actgagac actgaga	8210 DNA ALVAC  2 ctegt eteggegett teggtgatga eggtgaaaac etetgacaca tgeageteec eggte acagettgte tgtaagegga tgeegggage agacaageee gteagggege egggt gttggeggt gteggggetg gettaactat geggeateag ageagattgt eggtg caccatatge ggtgtaaat acegeacaga tgegtaagga gaaaataceg egge eattegeeat teaggetgeg caactgttgg gaagggegat eggtgegge	120 180 240 300
<211> <212> <213> <400> gccctttt ggagacg actgagac actgaga	8210 DNA ALVAC  2 tegt ctegegegtt teggtgatga eggtgaaaae etetgacaca tgeageteee eggte acagettgte tgtaagegga tgeegggage agacaageee gteagggege egggt gttggegggt gteggggetg gettaactat geggeateag ageagattgt eggtg caccatatge ggtgtgaaat acegeacaga tgegtaagga gaaaataceg	120 180 240
<211> <212> <213> <400> gcccttt ggagacg gtcagcg actgaga catcagg	8210 DNA ALVAC  2 ctegt eteggegett teggtgatga eggtgaaaac etetgacaca tgeageteec eggte acagettgte tgtaagegga tgeegggage agacaageee gteagggege egggt gttggeggt gteggggetg gettaactat geggeateag ageagattgt eggtg caccatatge ggtgtaaat acegeacaga tgegtaagga gaaaataceg egge eattegeeat teaggetgeg caactgttgg gaagggegat eggtgegge	120 180 240 300
<211> <212> <213> <400> gcccttt ggagacg gtcagcg actgaga catcagg catcagg	8210 DNA ALVAC  2 tegt etegegegtt teggtgatga eggtgaaaac etetgacaca tgeageteee eggte acagettgte tgtaagegga tgeegggage agacaageee gteagggege eggt gttggeggt gteggggetg gettaactat geggeateag ageagattgt eggt caccatatge ggtgtgaaat acegeacaga tgegtaagga gaaaataceg egge cattegecat teaggetgeg caactgttgg gaagggegat eggtgegge egeta ttaegecage tggegaaagg gggatgtget geaaggegat taagttgggt eaggg tttteecagt caegacgttg taaaacgacg gecagtgeca agettggetg	120 180 240 300 360 420
<211> <212> <213> <400> gcccttt ggagacg gtcagcg actgaga catcagg catcagg	8210 DNA ALVAC  2 ctcgt ctcgcgcgtt tcggtgatga cggtgaaaac ctctgacaca tgcagctccc cggtc acagcttgtc tgtaagcgga tgccgggagc agacaagccc gtcagggcgc cggt gttggcggt gtcggggctg gcttaactat gcggcatcag agcagattgt gagtg caccatatgc ggtgtgaaat accgcacaga tgcgtaagga gaaaataccg cgcc cattcgccat tcaggctgcg caactgttgg gaagggcgat cggtgcggc cgcta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt	120 180 240 300 360

tcttgcacaa gtcgccatta	gtagtataga	cttatacttt	gtaaccatag	tatactttag	600
cgcgtcatct tcttcatcta	aaacagattt	acaacaataa	tcatcgtcgt	catcttcatc	660
ttcattaaag ttttcatatt	caataacttt	cttttctaaa	acatcatctg	aatcaataaa	720
catagaacgg tatagagcgt	taatctccat	tgtaaaatat	actaacgcgt	tgctcatgat	780
gtacttttt tcattattta	gaaattatgc	attttagatc	tttataagcg	gccgtgatta	840
actagtcata aaaacccggg	atcgattcta	gactcgagat	aaaaactata	tcagagcaac	900
cccaaccagc actccaatca	tgatgccgac	agtggcccca	gctgagagac	caggagaagt	960
tccagatgca gagactgtga	tgctcttgac	tatggaatta	ttgcggccag	tagccaagtt	1020
agagacaaaa caggcatagg	tcccgttatt	atttggcgtg	attttggcga	taaagagaac	1080
ttgtgtgtgt tgctgcggta	tcccattgat	acgccaagaa	tactgcgggg	atgggttaga	1140
ggccgagtgg caggagaggt	tgaggtccgc	tcccgaaagg	taagacgagt	ctggggggga	1200
aatgatgggg gtgtccggcc	catagaggac	atccagggtg	actgggtcac	tgcggtttgc	1260
actcactgag ttctggattc	cacatacata	ggctcttgcg	tcatttcttg	tgacattgaa	1320
tagagtgagg gtcctgttgc	cattggacag	ctgcagcctg	ggactgactg	ggaggctctg	1380
accatttacc caccacaggt	aggttgtgtt	ctgagcctca	ggttcacagg	tgaaggccac	1440
agcatcettg teetecaegg	gtttggagtt	gttgctggag	atggagggct	tgggcagctc	1500
cgcggaaaca gttattgttt	taactgtagt	cctgctgtga	ccactggctg	agttattggc	1560
ctggcaagta tagagtccgc	tgttcttctc	agttatgttg	cttataaata	actcttgagt	1620
atgctgctga atgtttccat	caatcagcca	ggagtactgt	gcaggggggt	tggatgctgc	1680
atggcaagaa aggctcaagt	tcacgccggg	acggtagtag	gtgtatgatg	gagatatagt	1740
tgggtcgtct gggccataca	aaacattaag	gataacaggg	tcggagtgat	caacggataa	1800
ttcattctga atgccacact	cataaggtcc	tacatcattg	cgagtaacgg	acaggagtgt	1860
caatgtgcgg ttatcattag	acaactgcaa	gcgtgggcta	accggcaaac	tttggttatt	1920
gacccaccat aaataagtgg	tattttgaat	ctctggctca	caagttaatg	caactgcgtc	1980
ctcatcctca actgggttag	aattgttact	agttatgaat	ggttttggtg	gctcatacac	2040
ggtaatcgtc gtcacggttg	tgcggttgag	teeggtgteg	ctattgtgag	cttggcacgt	2100
gtaggatcca ctattgttca	cggtaatatt	gggaatgaac	agttcctggg	tggactgttg	2160
gaaagtgcca ttgacaaacc	agctgtattg	ggcgggagga	ttgctagcgg	catgacagct	2220
cagattcaga ttttcccctg	atctatagct	tgtgtttaga	gggctgattg	taggagcatc	2280

gggtccgtaa	agcacgttga	gaatcactga	atcagacctc	ctggcgctga	ctggattttg	2340
ggtttcgcat	ttgtagcttg	ctgtgtcgtt	cctggtcacg	ttaaacaggg	tcagagttct	2400
atttccgttg	ctgagttgga	gtctagggga	cacaggcagg	gactggttgt	tcacccacca	2460
gagatatgtt	gcgtcttgag	tttcgggctc	gcatgtaaaa	gcgacggcat	ctttgtcttc	2520
gacaggctta	ctattattgg	agctaataga	aggcttaggg	agttccgggt	atacccggaa	2580
ctggccagtt	gcttcttcat	tcacaagatc	tgactttatg	acgtgtaggg	tgtagaatcc	2640
tgtgtcattc	tggatgatgt	tctggatcag	cagggatgca	ttggggtata	ttatctctcg	2700
accactgtat	gcgggccctg	gggtagcttg	ttgagttcct	attacatatc	ctataatttg	2760
acggttgcca	tccactcttt	cacctttgta	ccagctgtag	ccaaaaagat	gctggggcag	2820
attgtggaca	agtagaagca	cctccttccc	ctctgcgaca	ttgaacggcg	tggattcaat	2880
agtgagcttg	gcagtggtgg	gcgggttcca	gaaggttaga	agtgaggctg	tgagcaggag	2940
cctctgccag	gggatgcacc	atctgtgggg	aggggccgag	ggagactcca	ttatttatat	3000
tccaaaaaaa	aaaaataaaa	tttcaatttt	tgtcgacctg	cagctcgacg	gateceeeeg	3060
ggttctttat	tctatactta	aaaagtgaaa	ataaatacaa	aggttcttga	gggttgtgtt	3120
aaattgaaag	cgagaaataa	tcataaatta	tttcattatc	gcgatatccg	ttaagtttgt	3180
atcgtaatgg	aggagccgca	gtcagatcct	agcgtcgagc	cccctctgag	tcaggaaaca	3240
ttttcagacc	tatggaaact	acttcctgaa	aacaacgttc	tgtccccctt	gccgtcccaa	3300
gcaatggatg	atttgatgct	gtccccggac	gatattgaac	aatggttcac	tgaagaccca	3360
ggtccagatg	aagctcccag	aatgccagag	gctgctcccc	ccgtggcccc	tgcaccagca	3420
gctcctacac	cggcggcccc	tgcaccagcc	ccctcctggc	ccctgtcatc	ttctgtccct	3480
tcccagaaaa	cctaccaggg	cagctacggt	ttccgtctgg	gcttcttgca	ttctgggaca	3540
gccaagtctg	tgacttgcac	gtactcccct	gccctcaaca	agatgttttg	ccaactggcc	3600
aagacctgcc	ctgtgcagct	gtgggttgat	tccacacccc	cgcccggcac	ccgcgtccgc	3660
gccatggcca	tctacaagca	gtcacagcac	atgacggagg	ttgtgaggcg	ctgccccac	3720
catgagcgct	gctcagatag	cgatggtctg	gcccctcctc	agcatcttat	ccgagtggaa	3780
ggaaatttgc	gtgtggagta	tttggatgac	agaaacactt	ttcgacatag	tgtggtggtg	3840
ccctatgagc	cgcctgaggt	tggctctgac	tgtaccacca	tccactacaa	ctacatgtgt	3900
aacagttcct	gcatgggcgg	catgaaccgg	aggcccatcc	tcaccatcat	cacactggaa	3960

gactccagtg gtaatctact	gggacggaac	agctttgagg	tgcgtgtttg	tgcctgtcct	4020
gggagagacc ggcgcacaga	ggaagagaat	ctccgcaaga	aaggggagcc	tcaccacgag	4080
ctgccccag ggagcactaa	gcgagcactg	cccaacaaca	ccagctcctc	tecccageca	4140
aagaagaaac cactggatgg	agaatatttc	acccttcaga	tccgtgggcg	tgagcgcttc	4200
gagatgttcc gagagctgaa	tgaggccttg	gaactcaagg	atgcccaggc	tgggaaggag	4260
ccagggggga gcagggctca	ctccagccac	ctgaagtcca	aaaagggtca	gtctacctcc	4320
cgccataaaa aactcatgtt	caagacagaa	gggcctgact	cagactgaac	gcgttttta	4380
tecegggete gagggtaceg	gatccttttt	atagctaatt	agtcacgtac	ctttgagagt	4440
accacttcag ctacctcttt	tgtgtctcag	agtaactttc	tttaatcaat	tccaaaacag	4500
tatatgattt tccatttctt	tcaaagatgt	agtttacatc	tgctcctttg	ttgaaaagta	4560
gcctgagcac ttctttcta	ccatgaatta	cagctggcaa	gatcaatttt	teccagttet	4620
ggacatttta tttttttaa	gtagtgtgct	acatatttca	atatttccag	attgtacagc	4680
gatcattaaa ggagtacgtc	ccatgttatc	cagcaagtca	gtatcagcac	ctttgttcaa	4740
tagaagttta accattgtta	aattttatt	tgatacggct	atatgtagag	gagttaaccg	4800
atccgtgttt gaaatatcta	catccgccga	atgagccaat	agaagtttaa	ccaaattaac	4860
tttgttaagg taagctgcca	aacacaaagg	agtaaagcct	ccgctgtaaa	gaacattgtt	4920
tacatagtta ttcttcaaca	gatctttcac	tattttgtag	tcgtctctca	acaccgcatc	4980
atgcagacaa gaagttgtgc	attcagtaac	tacaggttta	gctccatacc	tcatcaagat	5040
ttttatagcc tcggtattct	tgaacattac	agccatttca	agaggagatt	gtagagtacc	5100
atattccgtg ttagggtcga	atccattgtc	caaaaaccta	tttagagatg	cattgtcatt	5160
atccatgata gcctcacaga	cgtatatgta	agccatcttg	aatgtataat	tttgttgttt	5220
tcaacaaccg ctcgtgaaca	gcttctatac	tttttcattt	tcttcatgat	taatatagtt	5280
tacggaatat aagtatacaa	aaagtttata	gtaatctcat	aatatctgaa	acacatacat	5340
aaaacatgga agaattacac	gatgtcgttg	agataaatgg	ctttttattg	tcatagttta	5400
caaattcgca gtaatcttca	tcttttacga	atattgcaga	atctgtttta	tccaaccagt	5460
gatttttgta taatataact	ggtatcctat	cttccgatag	aatgctgtta	tttaacattt	5520
ttgcacctat taagttacat	ctgtcaaatc	catctttcca	actgacttta	tgtaacgatg	5580
cgaaatagca tttatcacta	tgtcgtaccc	aattatcatg	acaagattct	cttaaatacg	5640
taatcttatt atctcttgca	tattcgtaat	agtaattgta	aagagtatac	gataacagta	5700

tagatataca	cgtgatataa	atatttaacc	ccattcctga	gtaaaataat	tacgatatta	5760
catttccttt	tattatttt	atgttttagt	tatttgttag	gttatacaaa	aattatgttt	5820
atttgtgtat	atttaaagcg	tcgttaagaa	taagcttagt	taacatatta	tcgcttaggt	5880
tttgtagtat	ttgaatcctt	tctttaaatg	gattatttt	ccaatgcata	tttatagctt	5940
catccaaagt	ataacattta	acattcagaa	ttgcggccgc	aattcaattc	gtaatcatgg	6000
tcatagctgt	ttcctgtgtg	aaattgttat	ccgctcacaa	ttccacacaa	catacgagcc	6060
ggaagcataa	agtgtaaagc	ctggggtgcc	taatgagtga	gctaactcac	attaattgcg	6120
ttgcgctcac	tgcccgcttt	ccagtcggga	aacctgtcgt	gccagctgca	ttaatgaatc	6180
ggccaacgcg	cggggagagg	cggtttgcgt	attgggcgct	cttccgcttc	ctcgctcact	6240
gactcgctgc	gctcggtcgt	tcggctgcgg	cgagcggtat	cagctcactc	aaaggcggta	6300
atacggttat	ccacagaatc	aggggataac	gcaggaaaga	acatgtgagc	aaaaggccag	6360
caaaaggcca	ggaaccgtaa	aaaggccgcg	ttgctggcgt	ttttccatag	gctccgcccc	6420
cctgacgagc	atcacaaaaa	tcgacgctca	agtcagaggt	ggcgaaaccc	gacaggacta	6480
taaagatacc	aggcgtttcc	ccctggaagc	tccctcgtgc	gctctcctgt	teegaeeetg	6540
ccgcttaccg	gatacctgtc	cgcctttctc	ccttcgggaa	gcgtggcgct	ttctcatagc	6600
tcacgctgta	ggtatctcag	ttcggtgtag	gtcgttcgct	ccaagctggg	ctgtgtgcac	6660
gaaccccccg	ttcagcccga	ccgctgcgcc	ttatccggta	actatcgtct	tgagtccaac	6720
ccggtaagac	acgacttatc	gccactggca	gcagccactg	gtaacaggat	tagcagagcg	6780
aggtatgtag	gcggtgctac	agagttcttg	aagtggtggc	ctaactacgg	ctacactaga	6840
aggacagtat	ttggtatctg	cgctctgctg	aagccagtta	ccttcggaaa	aagagttggt	6900
agctcttgat	ccggcaaaca	aaccaccgct	ggtagcggtg	gtttttttgt	ttgcaagcag	6960
cagattacgc	gcagaaaaaa	aggatctcaa	gaagatcctt	tgatcttttc	tacggggtct	7020
gacgctcagt	ggaacgaaaa	ctcacgttaa	gggattttgg	tcatgagatt	atcaaaaagg	7080
atcttcacct	agatcctttt	aaattaaaaa	tgaagtttta	aatcaatcta	aagtatatat	7140
gagtaaactt	ggtctgacag	ttaccaatgc	ttaatcagtg	aggcacctat	ctcagcgatc	7200
tgtctatttc	gttcatccat	agttgcctga	ctccccgtcg	tgtagataac	tacgatacgg	7260
gagggcttac	catctggccc	cagtgctgca	atgataccgc	gagacccacg	ctcaccggct	7320

ccagatttat cagcaataaa ccagccagcc ggaagggccg agcgcagaag tggtcctgca

7380

actttatccg	cctccatcca	gtctattaat	tgttgccggg	aagctagagt	aagtagttcg	7440
ccagttaata	gtttgcgcaa	cgttgttgcc	attgctacag	gcatcgtggt	gtcacgctcg	7500
tcgtttggta	tggcttcatt	cagctccggt	tcccaacgat	caaggcgagt	tacatgatcc	7560
cccatgttgt	gcaaaaaagc	ggttagctcc	ttcggtcctc	cgatcgttgt	cagaagtaag	7620
ttggccgcag	tgttatcact	catggttatg	gcagcactgc	ataattctct	tactgtcatg	7680
ccatccgtaa	gatgcttttc	tgtgactggt	gagtactcaa	ccaagtcatt	ctgagaatag	7740
tgtatgcggc	gaccgagttg	ctcttgcccg	gcgtcaatac	gggataatac	cgcgccacat	7800
agcagaactt	taaaagtgct	catcattgga	aaacgttctt	cggggcgaaa	actctcaagg	7860
atcttaccgc	tgttgagatc	cagttcgatg	taacccactc	gtgcacccaa	ctgatcttca	7920
gcatcttta	ctttcaccag	cgtttctggg	tgagcaaaaa	caggaaggca	aaatgccgca	7980
aaaaagggaa	taagggcgac	acggaaatgt	tgaatactca	tactcttcct	ttttcaatat	8040
tattgaagca	tttatcaggg	ttattgtctc	atgagcggat	acatatttga	atgtatttag	8100
aaaaataaac	aaataggggt	tccgcgcaca	tttccccgaa	aagtgccacc	tgacgtctaa	8160
gaaaccatta	ttatcatgac	attaacctat	aaaaataggc	gtatcacgag		8210

<210> 3

<211> 8210

<212> DNA

<213> ALVAC

<400> 3

cgggaaagca	gagcgcgcaa	agccactact	gccacttttg	gagactgtgt	acgtcgaggg	60
cctctgccag	tgtcgaacag	acattcgcct	acggccctcg	tctgttcggg	cagtcccgcg	120
cagtcgccca	caaccgccca	cagccccgac	cgaattgata	cgccgtagtc	tcgtctaaca	180
tgactctcac	gtggtatacg	ccacacttta	tggcgtgtct	acgcattcct	cttttatggc	240
gtagtccgcg	gtaagcggta	agteegaege	gttgacaacc	cttcccgcta	gccacgcccg	300
gagaagcgat	aatgcggtcg	accgctttcc	ccctacacga	cgttccgcta	attcaaccca	360
ttgcggtccc	aaaagggtca	gtgctgcaac	attttgctgc	cggtcacggt	tcgaaccgac	420
gtccataaga	tttgatcctt	atctacttta	atacacgttt	cctctatgga	aatctatacc	480
tagactaaat	aaaccaaaaa	gtattagtat	tagattgttg	taaaagtgat	atgatatgga	540
agaacgtgtt	cagcggtaat	catcatatct	gaatatgaaa	cattggtatc	atatgaaatc	600
gcgcagtaga	agaagtagat	tttgtctaaa	tgttgttatt	agtagcagca	gtagaagtag	660

aagtaatttc	aaaagtataa	gttattgaaa	gaaaagattt	tgtagtagac	ttagttattt	720
gtatcttgcc	atatctcgca	attagaggta	acattttata	tgattgcgca	acgagtacta	780
catgaaaaaa	agtaataaat	ctttaatacg	taaaatctag	aaatattcgc	cggcactaat	840
tgatcagtat	ttttgggccc	tagctaagat	ctgagctcta	tttttgatat	agtctcgttg	900
gggttggtcg	tgaggttagt	actacggctg	tcaccggggt	cgactctctg	gtcctcttca	960
aggtctacgt	ctctgacact	acgagaactg	ataccttaat	aacgccggtc	atcggttcaa	1020
tctctgtttt	gtccgtatcc	agggcaataa	taaaccgcac	taaaaccgct	atttctcttg	1080
aacacacaca	acgacgccat	agggtaacta	tgcggttctt	atgacgcccc	tacccaatct	1140
ccggctcacc	gtcctctcca	actccaggcg	agggctttcc	attctgctca	gaccccccct	1200
ttactacccc	cacaggccgg	gtatctcctg	taggtcccac	tgacccagtg	acgccaaacg	1260
tgagtgactc	aagacctaag	gtgtatgtat	ccgagaacgc	agtaaagaac	actgtaactt	1320
atctcactcc	caggacaacg	gtaacctgtc	gacgtcggac	cctgactgac	cctccgagac	1380
tggtaaatgg	gtggtgtcca	tccaacacaa	gactcggagt	ccaagtgtcc	acttccggtg	1440
tegtaggaac	aggaggtgcc	caaacctcaa	caacgacctc	tacctcccga	acccgtcgag	1500
gegeetttgt	caataacaaa	attgacatca	ggacgacact	ggtgaccgac	tcaataaccg	1560
gaccgttcat	atctcaggcg	acaagaagag	tcaatacaac	gaatatttat	tgagaactca	1620
tacgacgact	tacaaaggta	gttagtcggt	cctcatgaca	cgtccccca	acctacgacg	1680
taccgttctt	tccgagttca	agtgcggccc	tgccatcatc	cacatactac	ctctatatca	1740
acccagcaga	cccggtatgt	tttgtaattc	ctattgtccc	agcctcacta	gttgcctatt	1800
aagtaagact	tacggtgtga	gtattccagg	atgtagtaac	gctcattgcc	tgtcctcaca	1860
gttacacgcc	aatagtaatc	tgttgacgtt	cgcacccgat	tggccgtttg	aaaccaataa	1920
ctgggtggta	tttattcacc	ataaaactta	gagaccgagt	gttcaattac	gttgacgcag	1980
gagtaggagt	tgacccaatc	ttaacaatga	tcaatactta	ccaaaaccac	cgagtatgtg	2040
ccattagcag	cagtgccaac	acgccaactc	aggccacagc	gataacactc	gaaccgtgca	2100
catcctaggt	gataacaagt	gccattataa	cccttacttg	tcaaggaccc	acctgacaac	2160
ctttcacggt	aactgtttgg	tcgacataac	ccgccctcct	aacgatcgcc	gtactgtcga	2220
gtctaagtct	aaaaggggac	tagatatcga	acacaaatct	cccgactaac	atcctcgtag	2280
cccaggcatt	tcgtgcaact	cttagtgact	tagtctggag	gaccgcgact	gacctaaaac	2340
ccaaagcgta	aacatcgaac	gacacagcaa	ggaccagtgc	aatttgtccc	agtctcaaga	2400

taaaggcaac	gactcaacct	cagatcccct	gtgtccgtcc	ctgaccaaca	agtgggtggt	2460
ctctatacaa	cgcagaactc	aaagcccgag	cgtacatttt	cgctgccgta	gaaacagaag	2520
ctgtccgaat	gataataacc	tcgattatct	tccgaatccc	tcaaggccca	tatgggcctt	2580
gaccggtcaa	cgaagaagta	agtgttctag	actgaaatac	tgcacatccc	acatcttagg	2640
acacagtaag	acctactaca	agacctagtc	gtccctacgt	aaccccatat	aatagagagc	2700
tggtgacata	cgcccgggac	cccatcgaac	aactcaagga	taatgtatag	gatattaaac	2760
tgccaacggt	aggtgagaaa	gtggaaacat	ggtcgacatc	ggtttttcta	cgaccccgtc	2820
taacacctgt	tcatcttcgt	ggaggaaggg	gagacgctgt	aacttgccgc	acctaagtta	2880
tcactcgaac	cgtcaccacc	cgcccaaggt	cttccaatct	tcactccgac	actcgtcctc	2940
ggagacggtc	ccctacgtgg	tagacacccc	teceeggete	cctctgaggt	aataaatata	3000
aggtttttt	tttttattt	aaagttaaaa	acagctggac	gtcgagctgc	ctaggggggc	3060
ccaagaaata	agatatgaat	ttttcacttt	tatttatgtt	tccaagaact	cccaacacaa	3120
tttaactttc	gctctttatt	agtatttaat	aaagtaatag	cgctataggc	aattcaaaca	3180
tagcattacc	teeteggegt	cagtctagga	tegeageteg	ggggagactc	agtcctttgt	3240
aaaagtctgg	atacctttga	tgaaggactt	ttgttgcaag	acagggggaa	cggcagggtt	3300
cgttacctac	taaactacga	caggggcctg	ctataacttg	ttaccaagtg	acttctgggt	3360
ccaggtctac	ttcgagggtc	ttacggtctc	cgacgagggg	ggcaccgggg	acgtggtcgt	3420
cgaggatgtg	gccgccgggg	acgtggtcgg	gggaggaccg	gggacagtag	aagacaggga	3480
agggtctttt	ggatggtccc	gtcgatgcca	aaggcagacc	cgaagaacgt	aagaccctgt	3540
cggttcagac	actgaacgtg	catgagggga	cgggagttgt	tctacaaaac	ggttgaccgg	3600
ttctggacgg	gacacgtcga	cacccaacta	aggtgtgggg	gcgggccgtg	ggcgcaggcg	3660
cggtaccggt	agatgttcgt	cagtgtcgtg	tactgcctcc	aacactccgc	gacgggggtg	3720
gtactcgcga	cgagtctatc	gctaccagac	cggggaggag	tcgtagaata	ggctcacctt	3780
cctttaaacg	cacacctcat	aaacctactg	tctttgtgaa	aagctgtatc	acaccaccac	3840
gggatactcg	gcggactcca	accgagactg	acatggtggt	aggtgatgtt	gatgtacaca	3900
ttgtcaagga	cgtacccgcc	gtacttggcc	tccgggtagg	agtggtagta	gtgtgacctt	3960
ctgaggtcac	cattagatga	ccctgccttg	tcgaaactcc	acgcacaaac	acggacagga	4020
ccctctctgg	ccgcgtgtct	ccttctctta	gaggcgttct	ttcccctcgg	agtggtgctc	4080

gacgggggtc cctcgtgat	t cgctcgtgac	gggttgttgt	ggtcgaggag	aggggtcggt	4140
ttcttctttg gtgacctac	c tcttataaag	tgggaagtct	aggcacccgc	actcgcgaag	4200
ctctacaagg ctctcgact	t actccggaac	cttgagttcc	tacgggtccg	acccttcctc	4260
ggtcccccct cgtcccgac	t gaggtcggtg	gacttcaggt	ttttcccagt	cagatggagg	4320
gcggtatttt ttgagtaca	a gttctgtctt	cccggactga	gtctgacttg	cgcaaaaaat	4380
agggcccgag ctcccatgg	c ctaggaaaaa	tatcgattaa	tcagtgcatg	gaaactctca	4440
tggtgaagtc gatggagaa	a acacagagtc	tcattgaaag	aaattagtta	aggttttgtc	4500
atatactaaa aggtaaaga	a agtttctaca	tcaaatgtag	acgaggaaac	aacttttcat	4560
cggactcgtg aagaaaaga	t ggtacttaat	gtcgaccgtt	ctagttaaaa	agggtcaaga	4620
cctgtaaaat aaaaaaaat	t catcacacga	tgtataaagt	tataaaggtc	taacatgtcg	4680
ctagtaattt cctcatgca	g ggtacaatag	gtcgttcagt	catagtcgtg	gaaacaagtt	4740
atcttcaaat tggtaacaa	t ttaaaaataa	actatgccga	tatacatctc	ctcaattggc	4800
taggcacaaa ctttataga	t gtaggcggct	tactcggtta	tcttcaaatt	ggtttaattg	4860
aaacaattcc attcgacgo	t ttgtgtttcc	tcatttcgga	ggcgacattt	cttgtaacaa	4920
atgtatcaat aagaagtto	t ctagaaagtg	ataaaacatc	agcagagagt	tgtggcgtag	4980
tacgtctgtt cttcaacac	g taagtcattg	atgtccaaat	cgaggtatgg	agtagttcta	5040
aaaatatcgg agccataag	a acttgtaatg	tcggtaaagt	tctcctctaa	catctcatgg	5100
tataaggcac aatcccago	t taggtaacag	gtttttggat	aaatctctac	gtaacagtaa	5160
taggtactat cggagtgtc	t gcatatacat	teggtagaac	ttacatatta	aaacaacaaa	5220
agttgttggc gagcacttg	t cgaagatatg	aaaaagtaaa	agaagtacta	a	